

AMENDMENTS TO THE CLAIMS

Claim 1 (Currently Amended): A microarray print head, said print head comprising:
a plurality of glass or quartz spotting capillaries capillary tubes disposed in a support that maintains a fixed spacing between said spotting capillaries and that permits the spotting capillaries capillary tubes to move in a direction parallel to the long axis of said capillaries capillary tubes, wherein said capillary tubes:

have an internal diameter ranging from about 20 μm to about 100 μm ;
have an aperture ID or OD ranging from about 20 μm to about 75 μm ;
have an outside diameter ranging from about 0.4 mm to about 1 mm;
have a center-to-center spacing ranging from about 1 mm to about 10 mm;
have a load volume ranging from about 0.05 μL to about 1 μL ; and
range in number from about 2 to 256;

wherein said capillary tubes are in fluid communication with a manifold.

Claim 2 (Currently Amended): The print head of claim 1, wherein said spotting capillaries capillary tubes have a tapered tip.

Claim 3 (Original): The print head of claim 2, wherein said tapered tip is ground.

Claim 4 (Currently Amended): The print head of claim 1, wherein a capillary tube comprising said print head has a maximum load volume of about 0.5 μL .

Claim 5 (Currently Amended): The print head of claim 1, wherein a capillary tube comprising said print head has a minimum load volume of about 0.05 μL .

Claim 6 (Currently Amended): The print head of claim 1, wherein a capillary tube comprising said print head has a load volume of about 0.2 μL .

Claim 7 (Currently Amended): The print head of claim 1, wherein said print head comprises at least 4 spotting capillaries capillary tubes.

Claim 8 (Currently Amended): The print head of claim 1, wherein said print head comprises at least 16 spotting capillaries capillary tubes.

Claim 9 (Currently Amended): The print head of claim 1, wherein the spacing between two adjacent spotting capillaries capillary tubes is about 3 mm or less, center to center.

Claim 10 (Currently Amended): The print head of claim 1, wherein said the spotting capillaries capillary tubes have detents where said spotting capillaries capillary tubes have a rest position wherein said detents contact said support stopping the movement of said spotting capillaries capillary tubes in a direction toward the substrate that is to be printed.

Claim 11 (Currently Amended): The print head of claim 1, wherein said print head comprises a spring attached to a spotting capillary tube where, in the absence of a force against the printing tip of said spotting capillary tube said spring returns said spotting capillary tube to a rest position.

Claim 12 (Original): The print head of claim 1, wherein said print head is in a microarray printing device.

Claim 13 (Canceled).

Claim 14 (Currently Amended): The print head of claim 32_1, wherein said manifold comprises a common port and individual ports wherein an aperture into an individual port is disposed inward of the inside wall of said manifold.

Claims 15-61 (Canceled).